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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellants:

Tsuyoshi MORIYAMA, *et al.*

Serial No.: 09/737,280

Filed: 15 December 2000

SHEET HANDLING APPARATUS WHICH
INSERTS INSERT SHEETS BETWEEN
RECORDING SHEETS HAVING IMAGETitle: FORMED THEREON, METHOD OF
CONTROLLING THE SAME, IMAGE
FORMING APPARATUS AND STORAGE
MEDIUM THEREFOR

Group Art Unit: 3653

Examiner: J. Shapiro

Attorney Docket No.: CANO:016

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BY: 
MARC A. ROSSICOMMISSIONER FOR PATENTS
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ALEXANDRIA, VA 22313-1450APPEAL BRIEF

Sir:

Further to the Notice of Appeal filed on 07 November 2005, appellants appeal claims 1-23, 47-65, 75, 76, and 78, as finally rejected in the Final rejection dated 06 July 2005. This Brief is timely as it is filed within 2 months of the Notice of Appeal.

The fee for filing this Appeal is \$500. The Commissioner is authorized to charge \$500 (or any additional fees required to maintain the pendency of this application) to Deposit Account No. 18-2056.

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SN. 09/737,280

ATTORNEY DOCKET NO. CANO:016

Real Party in Interest - Rule 41.37(c)(1)(i)

The real party in interest is CANON KABUSHIKI KAISHA of Japan.

Related Appeals and Interferences - Rule 41.37(c)(1)(ii)

No pending appeal, interference, or judicial proceeding that may be related to, directly affect or be directly affected by or have bearing on the Board's decision in this appeal is believed to exist. Appellants will identify any such appeal, interference, or judicial proceeding if it exists.

Status of Claims - Rule 41.37(c)(1)(iii)

Claims 1-23, 47-65, 75, 76, and 78 are pending in this application.

Claims 1-23, 47-65, 75, 76, and 78 stand finally rejected under 35 U.S.C. § 103(a) as unpatentable over Nyffeneger (USP 5,826,869).

Claims 1-23, 47-65, 75, 76, and 78 stand finally rejected under § 103(a) as unpatentable over Inoue (USP 5,159,546) in view of Nyffeneger.¹

No claim has been allowed.

Appellants appeal all pending claims 1-23, 47-65, 75, 76, and 78.

Status of Amendments - Rule 41.37(c)(1)(iv)

No claim was amended after the Final rejection. A Request for Pre-Appeal Brief Review was filed on 07 November 2005, along with a Notice of Appeal. The Notice of Panel Decision indicated that the application remains under appeal because there is at least one actual issue for appeal. The Panel indicated that all pending claims stand rejected. Appellants thus appeal claims 1-23, 47-65, 75, 76, and 78, as finally rejected. A copy of the claims involved in this appeal is appended hereto.

Summary of Claimed Subject Matter - Rule 41.37(c)(1)(v)

This application contains seven independent claims, claims 1, 47, 48, 57, 75, 76, and 78. Claims 1, 48, 57, and 76 are directed to a sheet handling apparatus (103) for an image forming

¹ The Final rejection contains some discrepancies that the examiner should correct. First, on page 3, the sentence beginning "As described in Claims 2 and 48" is incorrect since the feature described in paragraph "g" only corresponds to claim 2. Second, paragraph "g" also refers to "Cordery et al", which is not made of record or identified or applied. Third, on page 4, the sentence beginning "As described in Claims 4, 54, and 55" is incorrect since the feature described in paragraph "j" only corresponds to claim 4.

SN. 09/737,280

ATTORNEY DOCKET NO. CANO:016

apparatus (1000). Claims 47, 75, and 78 are directed to a machine-readable storage medium (2001) storing a computer program (4003) for controlling the sheet handling apparatus (103). See Figs. 30-31 and the first and second paragraph of page 43 and the paragraph spanning pages 43-44.

The sheet handling apparatus includes a receiving section (1), at least one inserter tray (20a, 20b, 20c), at least one sheet feeder (21a, 21b, 21c), a sheet feeding controller (300), a transporting device (2, 3), and a sheet feeding mode setting device or input terminal (640, 641). See Figs. 1-2 and the paragraph spanning pages 26-27, the first full paragraph of page 27, the second full paragraph of page 28, the paragraph spanning pages 28-29, the first full paragraph of page 29, and the first paragraph of page 34.

The receiving section (1) receives recording sheets (S) transported from the image forming apparatus (1000) having an image forming section (102) for forming an image on a sheet. See the paragraph spanning pages 26-27. The inserter tray (20a, 20b, 20c) stacks thereon insert sheets (IS), and the sheet feeder (21a, 21b, 21c) feeds the insert sheets (IS) stacked on the inserter tray (20a, 20b, 20c). See the first full paragraph of page 27 and the second full paragraph and the first sentence of the last paragraph of page 28. The transporting device (2, 3, 7, 9) transports recording sheets (S) received from the image forming apparatus (102) and the insert sheets (IS) fed from the inserter tray (20a, 20b, 20c) to a discharge tray (85, 86). See the first full paragraph of page 29 and the last paragraph of page 30. The sheet feeding controller (300) controls feeding of the insert sheets stacked on the inserter tray so that the insert sheets are inserted between the recording sheets transported from the image forming apparatus. The sheet feeding mode setting device or the input terminal (640, 641) sets or selects from at least two sheet feeding modes or stacking manners (F-Stacking, S-Stacking) for feeding the insert sheets (IS) from the inserter tray ((20a, 20b, 20c). See Fig. 6 and lines 4-7 of page 42.

In one aspect of the invention, namely claims 1 and 76, a plurality of inserter trays (20a, 20b, 20c) and feeders (21a, 21b, 21c) are used to feed the insert sheets. Here, when one setting mode (S-Stacking) is selected (S202), the sheet feeding controller (300) controls the sheet feeders (21a, 21b, 21c) to sequentially feed the insert sheets (IS) from a different one of the inserter trays (20a, 20b, 20c) every time an insert sheet is fed. See Fig. 8 and the first full paragraph of page 42 and the last paragraph of page 44 through the paragraph spanning pages 45-46 for the explanation of the S-Stacking mode. Moreover, when another setting mode (F-Stacking) is selected (S202), the sheet feeding controller (300) controls the sheet feeders (21a, 21b, 21c) to sequentially feed the insert sheets (IS) from only one (S218) of the inserter trays

SN. 09/737,280

ATTORNEY DOCKET NO. CANO:016

(20a, 20b, 20c) unless the one inserter tray is empty (S222). See Figs. 8-9 and the paragraph spanning pages 46-47 and the first full paragraph of page 47 for the explanation of the F-Stacking mode.

In another aspect of the invention, namely claims 48 and 57, when a predetermined mode (F-Stacking) is selected (S202), the sheet feeding controller (300) controls the sheet feeder (21a, 21b, 21c) to feed the insert sheets (IS) from the inserter tray (20a, 20b, 20c) without interrupting a job being executed when the insert sheets are re-stacked on the inserter tray (20a, 20b, 20c) after exhausting all the insert sheets (IS) stacked on the inserter tray (20a, 20b, 20c). See in particular Fig. 9 and the paragraph spanning pages 47-48. See also the description of the second embodiment at page 57, *et seq.* and Figs. 14-17.

Although claims 47, 75, and 78 are directed to a machine-readable storage medium storing a computer program for controlling a sheet handling apparatus, they correspond respectively to claims 1, 48, and 76. In this respect, these claims are not separately summarized since it will be redundant.

Grounds of Rejection to be Reviewed on Appeal - Rule 41.37(c)(1)(vi)

1. Whether Nyffeneger alone would have taught the invention set forth in independent claims 1, 47, 76, and 78, and depending claims 2-23 within the meaning of § 103; more specifically, whether Nyffeneger would have disclosed or taught the two types of stacking modes, as set forth in the independent claims.
2. Whether Inoue and Nyffeneger would have taught the invention set forth in independent claims 1, 47, 76, and 78, and depending claims 2-23 within the meaning of § 103; more specifically, whether Inoue and Nyffeneger would have disclosed or taught the two types of stacking modes, as set forth in the independent claims.
3. Whether Nyffeneger alone would have taught the invention set forth in independent claims 48, 57, and 75, and depending claims 49-56 and 58-65 within the meaning of § 103; more specifically, whether Nyffeneger would have disclosed or taught at least two types of stacking modes, with one mode that allows the sheet feeder to feed the insert sheets from the inserter tray without interrupting a job being executed when the insert sheets are re-stacked on the inserter tray, as set forth in these independent claims.

SN. 09/737,280

ATTORNEY DOCKET NO. CANO:016

4. Whether Inoue and Nyffeneger would have taught the invention set forth in independent claims 48, 57, and 75, and depending claims 49-56 and 58-65 within the meaning of § 103; more specifically, whether Inoue and Nyffeneger would have disclosed or taught at least two types of stacking modes, with one mode that allows the sheet feeder to feed the insert sheets from the inserter tray without interrupting a job being executed when the insert sheets are re-stacked on the inserter tray, as set forth in these independent claims.

Appellants' Arguments - Rule 41.37(c)(1)(vii)

1. **NYFFENEGER WOULD NOT HAVE TAUGHT THE TWO TYPES OF STACKING MODES AS SET FORTH IN INDEPENDENT CLAIMS 1, 47, 76, AND 78**

Independent claims 1, 47, 76, and 78 each call for a plurality of insert sheet feeding modes, which correspond, for example, to S-stacking mode appearing in Fig. 7A and F-stacking mode appearing in Fig. 7B, respectively. In one sheet feeding mode, such as the S-stacking mode, insert sheet feeding is controlled so that the insert sheets are sequentially fed from a different one of a plurality of inserter trays every time an insert sheet is fed. That is, the insert sheets of the same page can be stacked on one of the inserter trays so that the insert sheets of the same page can be fed from the one inserter tray and insert sheets of different pages can be fed from different inserter trays. In another sheet feeding mode, the insert sheet feeding is controlled so that the insert sheets are sequentially fed from one inserter tray unless the one inserter tray becomes empty. That is, insert sheets of different pages can be stacked on the one inserter tray so that insert sheets of different pages can be fed from the one inserter tray unless the one inserter tray is empty.

The examiner contends that it would have been obvious for Nyffeneger to control the feeding of insert sheets in any manner as desired by the user because it is computer controlled. In other words, according to the examiner, if an apparatus is computer controlled, it can be programmed to do as desired by the programmer, including the sheet feeding control as claimed. Appellants submit that the examiner's rationale for rejecting a claim is facially improper because the examiner does not provide any motivation for doing what the claims call for. Specifically, as set forth in the seminal Supreme Court case, *Graham v. John Deere*, to establish a prima facie case of obviousness, the examiner must identify a teaching or suggestion of the desirability of doing what the inventors here have done. That is, to establish that the claimed invention is directed to an obvious subject matter, either the applied reference must expressly or implicitly suggest the claimed invention or the examiner must present a

SN. 09/737,280

ATTORNEY DOCKET NO. CANO:016

convincing line of reasoning as to why an ordinary artisan would have found the claimed invention to have been obvious in light of the teachings of the applied reference. The suggestion or the examiner's reasoning, however, must be objective and supported by evidence. See MPEP §§ 2142, 2143, 2143.01.

First, the fact that a controller **CAN BE** programmed to control the sheet feeding as set forth in the claims is not germane to the issue of patentability under § 103. That is akin to relying on an obvious-to-try rationale rather than basing on what the applied reference teaches. What is germane is whether the applied references would have provided support or motivation for doing what the claims call for. Here, the examiner simply fails to provide any support or motivation as to why one of ordinary skill in the art would control the feeding of insert sheets as set forth in the claims. The examiner thus has failed to meet the burden of establishing a prima facie case of obviousness.

Second, Nyffeneger discloses a plurality of insert hoppers "a" through "n" that is computer controlled. Although Nyffeneger discloses a controller for feeding insert sheets from the insert hoppers, it is silent regarding how the insert sheets are fed. That is, Nyffeneger fails to disclose that it provides different feeding modes, let alone providing any specifics of any feeding mode. Therefore, Nyffeneger would not have provided a prima facie case of obviousness for controlling the feeding of the insert sheets as set forth in the independent claims.

2. THE COMBINATION WOULD NOT HAVE TAUGHT THE TWO TYPES OF STACKING MODES AS SET FORTH IN INDEPENDENT CLAIMS 1, 47, 76, AND 78

Appellants adopt the same arguments set forth in section 1 above regarding what the claims require and the failure of the examiner to provide prima facie case of obviousness based on Nyffeneger.

In Inoue, element 2006 in Fig. 30 refers to different copying modes, not insert sheet feeding modes. Although element 2002 in Fig. 30 refers to paper trays for feeding insert sheets, Inoue, like Nyffeneger, does not disclose how insert sheets are fed. Rather, Inoue merely illustrates in Fig. 30 that it has manual and automatic modes without any elaboration. Applicants submit that Inoue also fails to disclose or teach providing insert feeding modes as set forth in the independent claims. In this respect, the examiner relied upon Nyffeneger for the proposition that it would have been obvious for Inoue to use several or plural manual insert trays (a-n). Even if the combination were deemed proper for argument's sake, the combination still

SN. 09/737,280

ATTORNEY DOCKET NO. CANO:016

would not have taught providing different insert sheet feeding modes other than manual and automatic.

As neither Inoue nor Nyffeneger would not have disclosed or taught the claimed features highlighted in section 1 above, appellants submit that independent claims clearly define over the applied references.

3. **NYFFENEGER WOULD NOT HAVE TAUGHT AT LEAST TWO TYPES OF STACKING MODES, WITH ONE MODE THAT ALLOWS THE SHEET FEEDER TO FEED THE INSERT SHEETS FROM THE INSERTER TRAY WITHOUT INTERRUPTING A JOB BEING EXECUTED WHEN THE INSERT SHEETS ARE RE-STACKED ON THE INSERTER TRAY, AS SET FORTH IN INDEPENDENT CLAIMS 48, 57, AND 75**

Independent claims 48, 57, and 75 call for at least two kinds of stacking manners, such as the S-stacking mode and the F-stacking mode described previously. When one of the sheet feeding manners is selected, e.g., F-stacking mode, the insert sheet feeding is controlled to sequentially feed insert sheets from one of the inserter trays without interrupting a job being executed when the insert sheets are re-stacked on the one inserter tray after exhausting all the insert sheets stacked on the one inserter tray.

Again, in rejecting these claims as well, the examiner contends that it would have been obvious for Nyffeneger to control the feeding of insert sheets in any manner as desired by the user because it is computer controlled. Appellants adopt the same arguments set forth in section 1 above regarding a programmability of a computer itself being not germane to the issue of patentability under § 103. Appellants again submit that the examiner simply fails to provide any support or motivation as to why one of ordinary skill in the art would control the feeding of insert sheets as set forth in the claims. The examiner thus has failed to meet the burden of establishing a prima facie case of obviousness.

Moreover, appellants adopt the same arguments set forth in section 1 above regarding what Nyffeneger discloses. As Nyffeneger fails to disclose providing different feeding modes, let alone providing any specifics of any feeding mode, Nyffeneger would not have provided a prima facie case of obviousness for controlling the feeding of the insert sheets as set forth in the independent claims.

SN. 09/737,280

ATTORNEY DOCKET NO. CANO:016

4. THE COMBINATION WOULD NOT HAVE TAUGHT AT LEAST TWO TYPES OF STACKING MODES, WITH ONE MODE THAT ALLOWS THE SHEET FEEDER TO FEED THE INSERT SHEETS FROM THE INSERTER TRAY WITHOUT INTERRUPTING A JOB BEING EXECUTED WHEN THE INSERT SHEETS ARE RE-STACKED ON THE INSERTER TRAY, AS SET FORTH IN INDEPENDENT CLAIMS 48, 57, AND 75

Appellants adopt the same arguments set forth in sections 3 and 2 above, respectively regarding what the claims require and the failure of the examiner to provide prima facie case of obviousness based on Inoue and Nyffeneger.

Even if the combination were deemed proper for argument's sake, the combination still would not have taught providing different insert sheet feeding modes other than manual and automatic. As neither Inoue nor Nyffeneger would have disclosed or taught the claimed features highlighted in section 3 above, appellants submit that independent claims clearly define over the applied references.

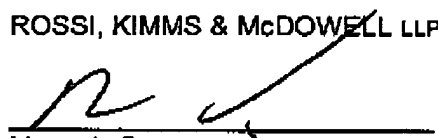
Conclusion

Appellants submit that claims 1-23, 47-65, 75, 76, and 78 patentably distinguish over the applied references and thus urge the Board to reverse the rejection of these claims.

Respectfully submitted,

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01/05/06
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SN. 09/737,280

ATTORNEY DOCKET NO. CANO:016

CLAIMS ON APPEAL (CLAIM APPENDIX) - Rule 41.37(c)(1)(viii)

1. *(Previously Presented)* A sheet handling apparatus comprising:

a receiving section that receives recording sheets transported from an image forming apparatus having an image forming section for forming an image on a sheet;

a plurality of inserter trays for having insert sheets stacked thereon;

a plurality of feeders that feed the insert sheets stacked on respective inserter trays;

a sheet feeding controller that controls feeding of the insert sheets stacked on the plurality of inserter trays so that the insert sheets are inserted between the recording sheets transported from the image forming apparatus;

a transporting device that transports recording sheets received from the image forming apparatus and insert sheets fed from at least one of said plurality of inserter trays to a discharge tray; and

a sheet feeding mode setting device that sets one of a plurality of sheet feeding modes corresponding respectively to a plurality of stacking manners,

wherein said sheet feeding modes include at least a first sheet feeding mode in which said sheet feeding controller controls said feeders to sequentially feed the insert sheets from a different one of said inserter trays every time an insert sheet is fed, and a second feeding mode in which said sheet feeding controller controls said feeders to sequentially feed the insert sheets from only one of the inserter trays unless the one inserter tray is empty.

2. *(Original)* A sheet handling apparatus according to claim 1, wherein said sheet feeding controller controls feeding of the insert sheets stacked on said plurality of inserter trays in accordance with the sheet feeding mode set by said sheet feeding mode setting device.

3. *(Original)* A sheet handling apparatus according to claim 1, wherein said plurality of sheet feeding modes include at least a first sheet feeding mode in which a same type of insert sheets are stacked on each of said plurality of inserter trays, and a second sheet feeding mode in which plural types of said insert sheets are stacked together on at least one of said plurality of inserter trays.

4. *(Previously Presented)* A sheet handling apparatus according to claim 3, wherein in said first sheet feeding mode, said sheet feeding controller sequentially feeds the insert sheets sheet by sheet from one of said plurality of inserter trays, and then changes to another of said inserter trays.

SN. 09/737,280

ATTORNEY DOCKET NO. CANO:016

5. *(Original)* A sheet handling apparatus according to claim 3, wherein in said second sheet feeding mode, said sheet feeding controller sequentially feeds the plural types of said insert sheets stacked together on said at least one of the inserter trays sheet by sheet starting from a top page sheet of the insert sheets.

6. *(Original)* A sheet handling apparatus according to claim 3, comprising an insert sheet number determining device that determines a total number of the insert sheets to be inserted between the recording sheets, a sheet stacking detector that detects presence or absence of the insert sheets stacked on each of said plurality of inserter trays, a comparator operable in said first sheet feeding mode to compare the total number of the insert sheets determined by said insert sheet number determining device with a total number of inserter trays on which presence of the insert sheets stacked thereon is detected by said sheet stacking detector, and a warning device that gives a predetermined warning if a result of the comparison by said comparator shows that the total number of the insert sheets does not coincide with the total number of the inserter trays.

7. *(Original)* A sheet handling apparatus according to claim 6, wherein said insert sheet number determining device determines the total number of the insert sheets through manual input by a user.

8. *(Original)* A sheet handling apparatus according to claim 6, wherein said image forming apparatus comprises an original reading device that reads images on a set of originals for forming images on the recording sheets, and a color original counter that recognizes color originals from said set of originals based on the images read by said original reading device and counts a number of the recognized color originals; and wherein said insert sheet number determining device determines the number of color originals counted by said color original counter as the total number of the insert sheets to be inserted between the recording sheets.

9. *(Original)* A sheet handling apparatus according to claim 8, comprising an image formation inhibiting device that inhibits image formation by said image forming section while said counting of color originals is being carried out by said color original counter.

10. *(Original)* A sheet handling apparatus according to claim 1, comprising a predetermined

SN. 09/737,280

ATTORNEY DOCKET NO. CANO:016

information reading device that reads predetermined information indicative of said sheet feeding mode recorded on a predetermined one of the insert sheets in advance, and said sheet feeding mode setting device sets said sheet feeding mode based on said predetermined information read by said predetermined information reading device.

11. *(Original)* A sheet handling apparatus according to claim 10, wherein said predetermined information is recorded at a location outside an image formed region of said predetermined one of the insert sheets.

12. *(Original)* A sheet handling apparatus according to claim 10, wherein said predetermined information is recorded on a leading edge portion of said predetermined one of the insert sheets.

13. *(Original)* A sheet handling apparatus according to claim 10, wherein said predetermined one of the insert sheets is a top one of the insert sheets stacked on each of said plurality of inserter trays.

14. *(Original)* A sheet handling apparatus according to claim 10, wherein said predetermined information reading device is brought into a position close to the insert sheets to read said predetermined information.

15. *(Original)* A sheet handling apparatus according to claim 10, wherein said sheet feeding controller comprises a driver for carrying out a sheet feeding operation for feeding the insert sheets stacked on said plurality of inserter trays, said driver being disposed to drive said predetermined information reading device.

16. *(Original)* A sheet handling apparatus according to claim 15, wherein said reading by said predetermined information reading device is carried out in synchronism with the feeding of the insert sheets by said sheet feeding controller.

17. *(Original)* A sheet handling apparatus according to claim 10, wherein said predetermined information reading device comprises at least one light reflection type sensor, and said predetermined information comprises a mark with a color being different in brightness from color of said predetermined one of the insert sheets.

SN. 09/737,280

ATTORNEY DOCKET NO. CANO:016

18. *(Original)* A sheet handling apparatus according to claim 10, comprising an error display device that displays failure to read said predetermined information by said predetermined information reading device.

19. *(Original)* A sheet handling apparatus according to claim 10, comprising a re-stacking detector that detects re-stacking of the insert sheets on said plurality of inserter trays, and said sheet feeding mode setting device is responsive to failure to read said predetermined information by said predetermined information reading device, for suspending setting of the sheet feeding mode until the re-stacking of the insert sheets is detected.

20. *(Original)* A sheet handling apparatus according to claim 10, wherein said sheet feeding mode setting device is responsive to failure to read said predetermined information by said predetermined information reading device, for setting the sheet feeding mode through manual setting by a user.

21. *(Previously Presented)* A sheet handling apparatus according to claim 10, comprising a recording sheet feeding inhibiting device responsive to failure to set the sheet feeding mode based on said predetermined information read by said predetermined information reading device, for inhibiting feeding of the recording sheets.

22. *(Original)* A sheet handling apparatus according to claim 1, wherein said sheet feeding mode setting device sets the sheet feeding mode through manual setting by a user.

23. *(Original)* A sheet handling apparatus according to claim 1, wherein the insert sheets stacked on the plurality of inserter trays are fed so as to bypass said image forming section.

24-46. *(Canceled)*

47. *(Previously Presented)* A machine readable storage medium storing a program for controlling a sheet handling apparatus comprising a receiving section that receives recording sheets transported from an image forming apparatus having an image forming section for forming an image on a sheet, a plurality of inserter trays for stacking insert sheets thereon, and a transporting device that transports recording sheets received from the image forming

SN. 09/737,280

ATTORNEY DOCKET NO. CANO:016

apparatus and insert sheets fed from at least one of the plurality of inserter trays to a discharge tray, the program including codes for:

controlling feeding of the insert sheets stacked on the respective inserter trays so that the insert sheet is inserted between the recording sheets transported from said image forming apparatus; and

setting one of a plurality of sheet feeding modes corresponding respectively to a plurality of stacking manners,

wherein said feeding modes include at least a first sheet feeding mode in which the insert sheets are sequentially fed from a different inserter tray every time an insert sheet is fed, and a second feeding mode in which the insert sheets are sequentially fed from only one of the inserter trays unless the one inserter tray is empty.

48. (*Previously Presented*) A sheet handling apparatus comprising:

a receiving section that receives recording sheets transported from an image forming apparatus having an image forming section for forming an image on a sheet;

at least one inserter tray for having insert sheets stacked thereon, the insert sheets being insertable between the recording sheets transported from the image forming apparatus;

a sheet feeder that feeds the insert sheets stacked on said inserter tray;

a sheet feeding controller that controls feeding of the insert sheets stacked on said inserter tray so that the insert sheets are inserted between the recording sheets transported from the image forming apparatus;

a transporting device that transports recording sheets received from the image forming apparatus and insert sheets fed from said inserter tray to a discharge tray; and

a stacking manner input terminal that selects a desired stacking manner from at least two kinds of stacking manners, for stacking the insert sheets on said inserter tray,

wherein said sheet feeding controller is operable when a predetermined stacking manner is selected by said stacking manner input terminal, for controlling said sheet feeder to feed the insert sheets from said inserter tray without interrupting a job being executed when insert sheets are re-stacked on said inserter tray after exhaustion of all the insert sheets stacked on said inserter tray.

49. (*Original*) A sheet handling apparatus according to claim 48, wherein said at least two kinds of stacking manners include a first stacking manner in which a single type of insert sheets are stacked on said inserter tray, and a second stacking manner in which plural types of insert

SN. 09/737,280

ATTORNEY DOCKET NO. CANO:016

sheets are stacked on said inserter tray, and wherein said controller is responsive to selection of said second stacking manner by the stacking manner input terminal, for controlling said sheet feeder to feed the insert sheets from said inserter tray without interrupting the job being executed if insert sheets are re-stacked on said inserter tray after exhaustion of all the insert sheets stacked on said inserter tray.

50. (*Original*) A sheet handling apparatus according to claim 48, further comprising a reading device that reads images on *Originals*, an image forming device provided in said image forming section, for forming images on the recording sheets based on the images read by said image reading device, a post processing device comprising said inserter tray, and said sheet feeder, said post processing device carrying out a post process of inserting the insert sheets which are fed so as to bypass said image forming device, between the recording sheets having the images formed thereon by said image forming device, and an insert information input terminal that inputs at least one inserting position of the recording sheets having the images formed thereon by said image forming device where the insert sheets are to be inserted, said inserter tray comprising a plurality of inserter trays, and wherein said controller controls an order of said plurality of inserter trays in which the insert sheets are fed from said plurality of inserter trays by said sheet feeder, based on information input from said stacking manner input terminal.

51. (*Original*) A sheet handling apparatus according to claim 48, wherein said inserter tray comprises a plurality of inserter trays, the image forming apparatus further comprising a plurality of insert sheet detectors provided in a fashion corresponding respectively to said plurality of inserter trays, for detecting presence or absence of at least one insert sheet on said inserter trays, and an insert mode selector that selects an insert mode for inserting the insert sheets between the recording sheets, and wherein said controller is responsive to selection of said insert mode by said insert mode selector, for controlling said image forming device to start an image forming operation if at least one insert sheet is detected by any of said plurality of insert sheet detectors.

52. (*Original*) A sheet handling apparatus according to claim 51, wherein said controller controls said insert sheet detectors to determine presence or absence of insert sheets on said plurality of inserter trays in order from upper ones to lower ones in a vertical direction.

53. (*Original*) A sheet handling apparatus according to claim 51, wherein said controller

SN. 09/737,280

ATTORNEY DOCKET NO. CANO:016

controls said insert sheet detectors to determine presence or absence of insert sheets on said plurality of inserter trays in order from lower ones to upper ones in a vertical direction.

54. *(Original)* A sheet handling apparatus according to claim 48, wherein said at least two kinds of stacking manners include a first stacking manner in which a single type of insert sheets are stacked on said inserter tray, and a second stacking manner in which plural types of insert sheets are stacked on said inserter tray, said inserter tray comprising a plurality of inserter trays, the image forming apparatus further comprising a plurality of insert sheet detectors provided in a fashion corresponding respectively to said plurality of inserter trays, for detecting presence or absence of at least one insert sheet on said inserter trays, and an insert mode selector that selects an insert mode for inserting the insert sheets between the recording sheets, and wherein said controller is responsive to selection of said insert mode by said insert mode selector and selection of said second stacking manner by said stacking manner input terminal, for controlling said image forming device to start an image forming operation, if at least one insert sheet is detected by any of said plurality of insert sheet detectors.

55. *(Original)* A sheet handling apparatus according to claim 48, further comprising an insert sheet detector that detects at least one insert sheet stacked on said inserter tray, and wherein said at least two kinds of stacking manners include a first stacking manner in which a single type of insert sheets are stacked on said inserter tray, and a second stacking manner in which plural types of insert sheets are stacked on said inserter tray, said inserter tray comprising one or a plurality of inserter trays, and wherein said controller is responsive to exhaustion of all the insert sheets stacked on said one or said plurality of inserter trays while said second stacking manner is selected by said stacking manner input terminal during outputting of said job and detection of re-stacking of at least one insert sheet on said one or said plurality of inserter trays by said insert sheet detector, for controlling said sheet feeder to start feeding the at least one insert sheet from said one or said plurality of inserter trays upon lapse of a predetermined period of time after said detection of re-stacking.

56. *(Original)* A sheet handling apparatus according to claim 48, further comprising an insert sheet detector that detects at least one insert sheet stacked on said inserter tray, and a job restart input terminal for instructing restart of a job, said at least two kinds of stacking manners including a first stacking manner in which a single type of insert sheets are stacked on said inserter tray, and a second stacking manner in which plural types of insert sheets are stacked

SN. 09/737,280

ATTORNEY DOCKET NO. CANO:016

on said inserter tray, said inserter tray comprising one or a plurality of inserter trays, and wherein said controller is responsive to exhaustion of all the insert sheets stacked on said one or said plurality of inserter trays while said second stacking manner is selected by said stacking manner input terminal during outputting of said job and detection of re-stacking of at least one insert sheet on said one or said plurality of inserter trays by said insert sheet detector, for controlling said sheet feeder to feed the at least one insert sheet from said one or said plurality of inserter trays if the restart of said job is instructed by said job restart input terminal after the detection of re-stacking of the at least one insert sheet by said insert sheet detector.

57. (Previously Presented) A sheet handling apparatus comprising:

- a receiving section that receives recording sheets transported from an image forming apparatus having an image forming section for forming an image on a sheet;

- at least one inserter tray for stacking thereon insert sheets to be inserted between recording sheets having images formed thereon in the image forming apparatus;

- a sheet feeder for feeding the insert sheets stacked on the inserter tray;

- a sheet feeding controller that controls feeding of the insert sheets stacked on said inserter tray so that the insert sheets are inserted between the recording sheets transported from the image forming apparatus;

- a transporting device that transports recording sheets received from the image forming apparatus and insert sheets fed from said inserter tray to a discharge tray,

- wherein while a predetermined stacking manner is selected from at least two kinds of stacking manners for stacking insert sheets on said inserter tray, said sheet feeder is controlled to feed insert sheets from said inserter tray without interrupting a job being executed if the insert sheets stacked on said inserter tray are exhausted and thereafter insert sheets are re-stacked on said inserter tray.

58. (Original) A sheet handling apparatus according to claim 57, wherein said at least two kinds of stacking manners include a first stacking manner in which a single type of insert sheets are stacked on said inserter tray, and a second stacking manner in which plural types of insert sheets are stacked on said inserter tray, and wherein when said second stacking manner is selected, said sheet feeder is controlled to feed the insert sheets from said inserter trays without stopping the job being executed if the insert sheets stacked on said inserter tray are exhausted and thereafter insert sheets are re-stacked on said inserter tray.

SN. 09/737,280

ATTORNEY DOCKET NO. CANO:016

59. *(Original)* A sheet handling apparatus according to claim 57, further comprising a sheet handling device comprising said inserter tray, and said sheet feeder, said post processing device carrying out a post process of inserting the insert sheets which are fed so as to bypass said main body of said image forming apparatus, between the recording sheets having the images formed thereon in said main body of said image forming apparatus, said inserter tray comprising a plurality of inserter trays, and wherein an order of said plurality of inserter trays in which the insert sheets are fed from said plurality of inserter trays by said sheet feeder is controlled based on input information on said stacking manner.

60. *(Original)* A sheet handling apparatus according to any one of claim 57, wherein said inserter tray comprises a plurality of inserter trays, the apparatus further comprising a plurality of insert sheet detectors provided in a fashion corresponding respectively to said plurality of inserter trays, for detecting presence or absence of at least one insert sheet on said inserter trays, and wherein when an insert mode for inserting the insert sheets between the recording sheets is selected, an image forming operation is started in said main body of said image forming apparatus if at least one insert sheet is detected by any of said plurality of insert sheet detectors.

61. *(Original)* A sheet handling apparatus according to claim 60, wherein said insert sheet detectors are controlled to determine presence or absence of insert sheets on said plurality of inserter trays in order from upper ones to lower ones in a vertical direction.

62. *(Original)* A sheet handling apparatus according to claim 60, wherein said insert sheet detectors are controlled to determine presence or absence of insert sheets on said plurality of inserter trays in order from lower ones to upper ones in a vertical direction.

63. *(Original)* A sheet handling apparatus according to claim 57, wherein said at least two kinds of stacking manners include a first stacking manner in which a single type of insert sheets are stacked on said inserter tray, and a second stacking manner in which plural types of insert sheets are stacked on said inserter tray, said inserter tray comprising a plurality of inserter trays, the image forming apparatus further comprising a plurality of insert sheet detectors provided in a fashion corresponding respectively to said plurality of inserter trays, for detecting presence or absence of at least one insert sheet on said inserter trays, and wherein when an insert mode for inserting the insert sheets between the recording sheets is selected and said second stacking

SN. 09/737,280

ATTORNEY DOCKET NO. CANO:016

manner is selected, an image forming operation is started in said main body of said image forming apparatus if at least one insert sheet is detected by any of said plurality of insert sheet detectors.

64. *(Original)* A sheet handling apparatus according to claim 57, further comprising a plurality of insert sheet detectors provided in a fashion corresponding respectively to said plurality of inserter trays, for detecting presence or absence of at least one insert sheet on said inserter trays, said at least two kinds of stacking manners including a first stacking manner in which a single type of insert sheets are stacked on said inserter tray, and a second stacking manner in which plural types of insert sheets are stacked on said inserter tray, said inserter tray comprising one or a plurality of inserter trays, and wherein when all the insert sheets stacked on said one or said plurality of inserter trays are exhausted while said second stacking manner is selected during outputting of said job and thereafter re-stacking of at least one insert sheet on said one or said plurality of inserter trays is detected by said insert sheet detector, said sheet feeder is controlled to start feeding the at least one insert sheet from said one or said plurality of inserter trays upon lapse of a predetermined period of time after the detection of re-stacking.

65. *(Original)* A sheet handling apparatus according to claim 57, further comprising a plurality of insert sheet detectors provided in a fashion corresponding respectively to said plurality of inserter trays, for detecting presence or absence of at least one insert sheet on said inserter trays, said at least two kinds of stacking manners including a first stacking manner in which a single type of insert sheets are stacked on said inserter tray, and a second stacking manner in which plural types of insert sheets are stacked on said inserter tray, said inserter tray comprising one or a plurality of inserter trays, and wherein when all the insert sheets stacked on said one or said plurality of inserter trays are exhausted while said second stacking manner is selected during outputting of said job and thereafter re-stacking of at least one insert sheet on said one or said plurality of inserter trays is detected by said insert sheet detector, said sheet feeder is controlled to start feeding the at least one insert sheet from said one or said plurality of inserter trays if restart of said job is instructed after the detection of re-stacking of the at least one insert sheet by said insert sheet detector.

66-74. *(Canceled)*

75. *(Previously Presented)* A machine readable storage medium storing a program for

SN. 09/737,280

ATTORNEY DOCKET NO. CANO:016

controlling insert of insert sheets in a sheet handling apparatus comprising a receiving section that receives recording sheets transported from an image forming apparatus having an image forming section for forming an image on a sheet, at least one inserter tray for having the insert sheets stacked thereon, the insert sheets being insertable between the recording sheets transported from the image forming apparatus, a sheet feeder that feeds the insert sheets stacked on the inserter tray, and a transporting device that transports recording sheets received from the image forming apparatus and insert sheets fed from the inserter tray to a discharge tray, the program including codes for:

- selecting a desired stacking manner from at least two kinds of stacking manners, for stacking the insert sheets on the inserter tray;

- controlling the feeding of the insert sheets stacked on the inserter tray so that the insert sheets are inserted between the recording sheets transported from the image forming apparatus; and

- controlling the sheet feeder to feed the insert sheets from the inserter tray without interrupting a job being executed when insert sheets are re-stacked on the inserter tray after exhaustion of all the insert sheets stacked on the inserter tray while a predetermined stacking manner is selected by said stacking manner selecting code.

76. *(Previously Presented)* A sheet handling apparatus comprising:

- a receiving section that receives recording sheets transported from an image forming apparatus having an image forming section for forming an image on a sheet;

- a plurality of inserter trays that hold insert sheets;

- a plurality of feeders that feed the insert sheets stacked on said inserter trays respectively;

- a sheet feeding controller that controls feeding of the insert sheets stacked on said plurality of inserter trays so that the insert sheet is inserted between the recording sheets transported from the image forming apparatus;

- a transporting device that transports recording sheets received from the image forming apparatus and insert sheets fed from at least one of said plurality of inserter trays to a discharge tray; and

- an instruction inputting terminal that inputs an instruction selecting one of a plurality of sheet feeding modes including a first mode for plural types of insert sheets stacked on said inserter trays respectively and a second mode for plural types of insert sheets stacked on at least one of said inserter trays,

SN. 09/737,280

ATTORNEY DOCKET NO. CANO:016

wherein said sheet feeding controller controls said feeders to sequentially feed the insert sheets from a different one of said inserter trays every time an insert sheet is fed, and controls said feeders to sequentially feed the insert sheets from only one of said inserter trays unless the one inserter tray is empty.

77. *(Canceled)*

78. *(Previously Presented)* A machine readable storage medium storing a program for controlling a sheet handling apparatus including a receiving section that receives recording sheets transported from an image forming apparatus having an image forming section for forming an image on a sheet, a plurality of inserter trays that hold insert sheets, a plurality of feeders that feed the insert sheets stacked on the inserter trays respectively, and a transporting device that transports recording sheets received from the image forming apparatus and insert sheets fed from at least one of the plurality of inserter trays to a discharge tray, the program including codes for:

inputting an instruction selecting one of a plurality of sheet feeding modes including a first mode for plural types of insert sheets stacked on said inserter trays respectively and a second mode for plural types of insert sheets stacked on at least one of the inserter trays;

controlling the feeding of the insert sheets stacked on the plurality of inserter trays so that the insert sheet is inserted between the recording sheets transported from the image forming apparatus; and

controlling the feeders to sequentially feed the insert sheets from a different one of the inserter trays every time an insert sheet is fed, and to sequentially feed the insert sheets from only one of the inserter trays unless the one inserter tray is empty.

SN. 09/737,280

ATTORNEY DOCKET NO. CANO:016

EVIDENCE APPENDIX - Rule 41.37(c)(1)(ix)

None.

SN. 09/737,280

ATTORNEY DOCKET NO. CANO:016

RELATED PROCEEDINGS APPENDIX - Rule 41.37(c)(1)(x)

None.

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellants:

Tsuyoshi MORIYAMA, *et al.*

Serial No.: 09/737,280

Filed: 15 December 2000

Title: SHEET HANDLING APPARATUS WHICH
INSERTS INSERT SHEETS BETWEEN
RECORDING SHEETS HAVING IMAGE
FORMED THEREON, METHOD OF
CONTROLLING THE SAME, IMAGE
FORMING APPARATUS AND STORAGE
MEDIUM THEREFOR

Group Art Unit: 3653

Examiner: J. Shapiro

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Total Pages **23** (including this page)
THE FOLLOWING DOCUMENTS ARE FAXED:

Documents	Page(s)
COVER SHEET	1
APPEAL BRIEF	22 (Pages 1-22)

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